

1. Effective (Isotropic) Radiated Power Output Data

1.1 Test Result

1.1.1 B5_1.4MHz_ERP

Band: 5 / Bandwidth: 1.4MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	824.7	1	0	22.89	2.47	23.21	<=38.45	Pass
			5	22.84	2.47	23.16	<=38.45	Pass
		6	0	21.87	2.47	22.19	<=38.45	Pass
	836.5	1	0	22.87	2.47	23.19	<=38.45	Pass
			5	22.88	2.47	23.20	<=38.45	Pass
		6	0	21.94	2.47	22.26	<=38.45	Pass
	848.3	1	0	22.96	2.47	23.28	<=38.45	Pass
			5	22.82	2.47	23.14	<=38.45	Pass
		6	0	22.01	2.47	22.33	<=38.45	Pass
16QAM	824.7	1	0	22.01	2.47	22.33	<=38.45	Pass
			5	21.97	2.47	22.29	<=38.45	Pass
		6	0	20.88	2.47	21.20	<=38.45	Pass
	836.5	1	0	21.87	2.47	22.19	<=38.45	Pass
			5	21.92	2.47	22.24	<=38.45	Pass
		6	0	20.83	2.47	21.15	<=38.45	Pass
	848.3	1	0	21.97	2.47	22.29	<=38.45	Pass
			5	21.96	2.47	22.28	<=38.45	Pass
		6	0	21.01	2.47	21.33	<=38.45	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

1.1.2 B5_3MHz_ERP

Band: 5 / Bandwidth: 3MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	825.5	1	0	22.86	2.47	23.18	<=38.45	Pass
			14	22.88	2.47	23.20	<=38.45	Pass
		15	0	21.84	2.47	22.16	<=38.45	Pass
	836.5	1	0	22.86	2.47	23.18	<=38.45	Pass
			14	22.87	2.47	23.19	<=38.45	Pass
		15	0	21.93	2.47	22.25	<=38.45	Pass
	847.5	1	0	23.02	2.47	23.34	<=38.45	Pass
			14	22.96	2.47	23.28	<=38.45	Pass
		15	0	22.08	2.47	22.40	<=38.45	Pass
16QAM	825.5	1	0	22.01	2.47	22.33	<=38.45	Pass
			14	21.98	2.47	22.30	<=38.45	Pass
		15	0	20.78	2.47	21.10	<=38.45	Pass
	836.5	1	0	21.86	2.47	22.18	<=38.45	Pass
			14	21.88	2.47	22.20	<=38.45	Pass
		15	0	20.94	2.47	21.26	<=38.45	Pass
	847.5	1	0	22.55	2.47	22.87	<=38.45	Pass
			14	22.52	2.47	22.84	<=38.45	Pass
		15	0	21.11	2.47	21.43	<=38.45	Pass

Note1: ERP=Conducted Power+Antenna Gain-2.15

1.1.3 B5_5MHz_ERP

Band: 5 / Bandwidth: 5MHz / NTNV								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	826.5	1	0	22.95	2.47	23.27	<=38.45	Pass
			24	22.90	2.47	23.22	<=38.45	Pass
		25	0	21.93	2.47	22.25	<=38.45	Pass
	836.5	1	0	22.92	2.47	23.24	<=38.45	Pass
			24	22.93	2.47	23.25	<=38.45	Pass
		25	0	21.92	2.47	22.24	<=38.45	Pass
	846.5	1	0	23.15	2.47	23.47	<=38.45	Pass
			24	22.94	2.47	23.26	<=38.45	Pass
		25	0	22.10	2.47	22.42	<=38.45	Pass
16QAM	826.5	1	0	21.78	2.47	22.10	<=38.45	Pass
			24	21.75	2.47	22.07	<=38.45	Pass
		25	0	20.91	2.47	21.23	<=38.45	Pass
	836.5	1	0	22.16	2.47	22.48	<=38.45	Pass
			24	22.18	2.47	22.50	<=38.45	Pass
		25	0	20.92	2.47	21.24	<=38.45	Pass
	846.5	1	0	22.22	2.47	22.54	<=38.45	Pass
			24	22.12	2.47	22.44	<=38.45	Pass
		25	0	21.07	2.47	21.39	<=38.45	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

1.1.4 B5_10MHz_ERP

Band: 5 / Bandwidth: 10MHz / NTVN								
Modulation	Frequency (MHz)	RB Allocation		Conducted Power (dBm)	Gain (dBi)	ERP (dBm)		Verdict
		Size	Offset			Result	Limit	
QPSK	829	1	0	23.01	2.47	23.33	<=38.45	Pass
			49	23.13	2.47	23.45	<=38.45	Pass
		50	0	21.90	2.47	22.22	<=38.45	Pass
	836.5	1	0	22.96	2.47	23.28	<=38.45	Pass
			49	23.27	2.47	23.59	<=38.45	Pass
		50	0	22.00	2.47	22.32	<=38.45	Pass
	844	1	0	23.24	2.47	23.56	<=38.45	Pass
			49	22.81	2.47	23.13	<=38.45	Pass
		50	0	22.18	2.47	22.50	<=38.45	Pass
16QAM	829	1	0	22.61	2.47	22.93	<=38.45	Pass
			49	22.67	2.47	22.99	<=38.45	Pass
		50	0	20.86	2.47	21.18	<=38.45	Pass
	836.5	1	0	22.11	2.47	22.43	<=38.45	Pass
			49	22.41	2.47	22.73	<=38.45	Pass
		50	0	21.02	2.47	21.34	<=38.45	Pass
	844	1	0	22.19	2.47	22.51	<=38.45	Pass
			49	21.90	2.47	22.22	<=38.45	Pass
		50	0	21.17	2.47	21.49	<=38.45	Pass
Note1: ERP=Conducted Power+Antenna Gain-2.15								

2. Frequency Stability

2.1 Test Result

2.1.1 B5_10MHz

Band: 5 / Bandwidth: 10MHz									
Modulation	Frequency (MHz)	RB Allocation		Temp. (°C)	Voltage (VDC)	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
		Size	Offset				Result	Limit	
QPSK	836.5	50	0	20	12	1.602	0.0019	-2.5 to 2.5	Pass
					24	1.659	0.0020	-2.5 to 2.5	Pass
					48	-0.300	-0.0004	-2.5 to 2.5	Pass
				-30	24	0.072	0.0001	-2.5 to 2.5	Pass
				-20	24	1.016	0.0012	-2.5 to 2.5	Pass
				-10	24	0.901	0.0011	-2.5 to 2.5	Pass
				0	24	1.230	0.0015	-2.5 to 2.5	Pass
				10	24	0.830	0.0010	-2.5 to 2.5	Pass
				30	24	0.272	0.0003	-2.5 to 2.5	Pass
				40	24	-0.458	-0.0005	-2.5 to 2.5	Pass
				50	24	0.615	0.0007	-2.5 to 2.5	Pass

3. 99% & 26dB Bandwidth

3.1 Test Result

3.1.1 Band5_OBW

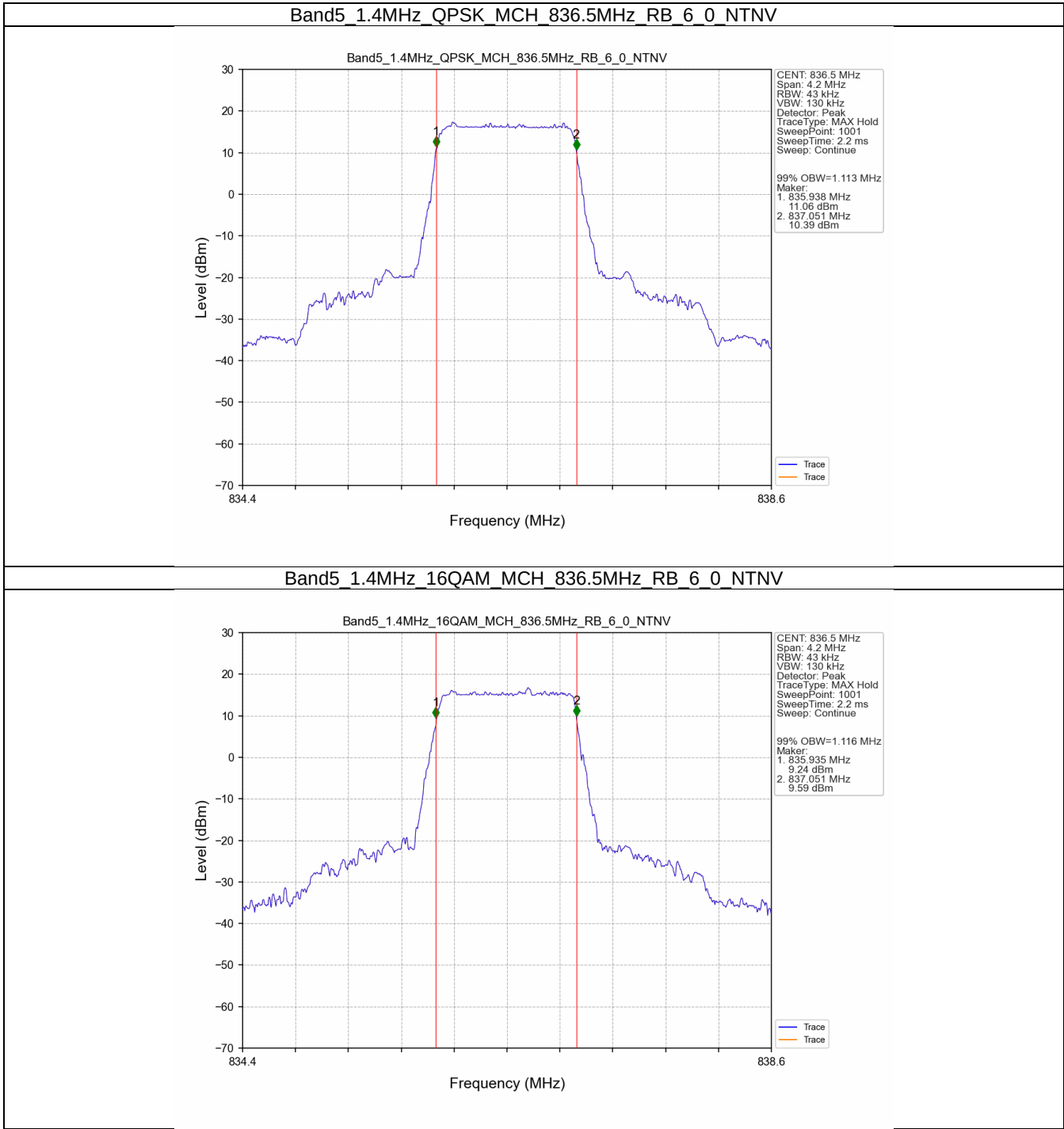
Band: 5 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		99% Occupied Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
1.4	QPSK	836.5	6	0	1.113	/	Pass
	16QAM	836.5	6	0	1.116	/	Pass
3	QPSK	836.5	15	0	2.750	/	Pass
	16QAM	836.5	15	0	2.738	/	Pass
5	QPSK	836.5	25	0	4.559	/	Pass
	16QAM	836.5	25	0	4.547	/	Pass
10	QPSK	836.5	50	0	9.079	/	Pass
	16QAM	836.5	50	0	9.054	/	Pass

3.1.2 Band5_XDB

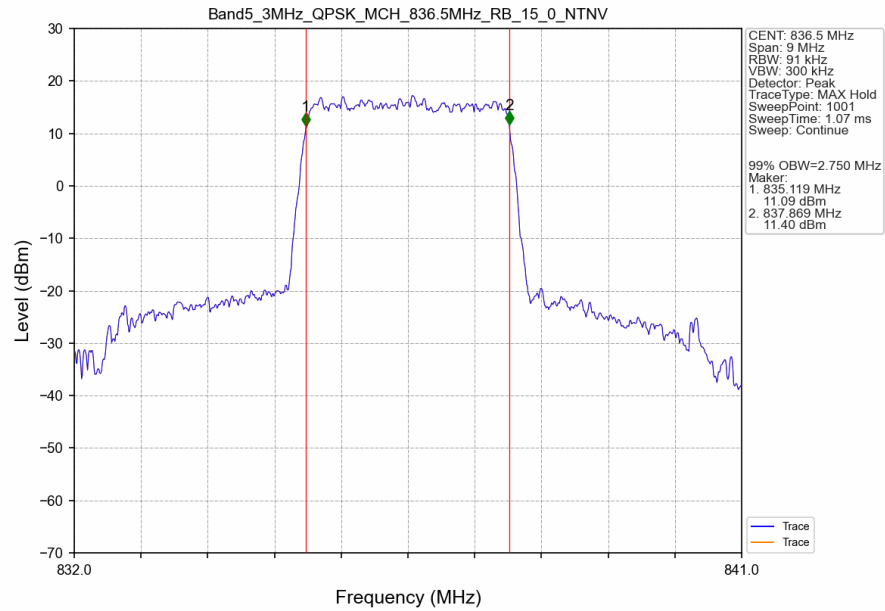
Band: 5 / NTNV							
Bandwidth (MHz)	Modulation	Frequency (MHz)	RB Allocation		26dB Bandwidth (MHz)		Verdict
			Size	Offset	Result	Limit	
1.4	QPSK	836.5	6	0	1.315	/	Pass
	16QAM	836.5	6	0	1.321	/	Pass
3	QPSK	836.5	15	0	3.047	/	Pass
	16QAM	836.5	15	0	3.050	/	Pass
5	QPSK	836.5	25	0	5.096	/	Pass
	16QAM	836.5	25	0	5.113	/	Pass
10	QPSK	836.5	50	0	10.132	/	Pass
	16QAM	836.5	50	0	10.028	/	Pass

3.2 Test Graph

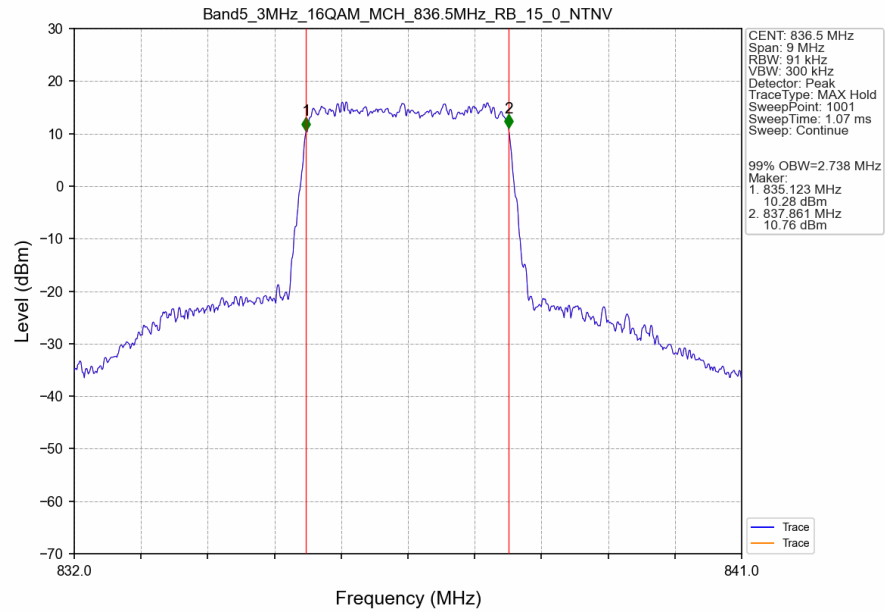
3.2.1 Band5_OBW



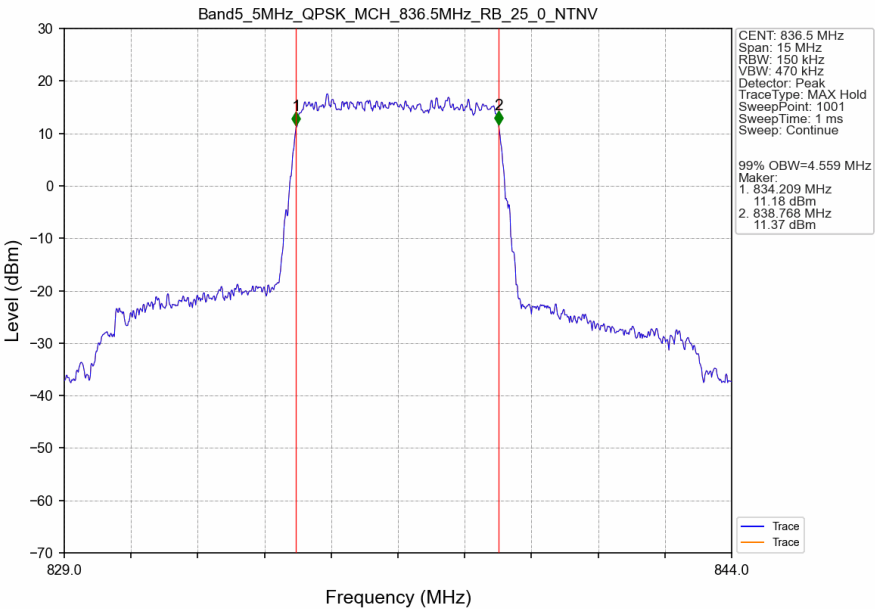
Band5 3MHz QPSK MCH 836.5MHz RB 15 0 NTN



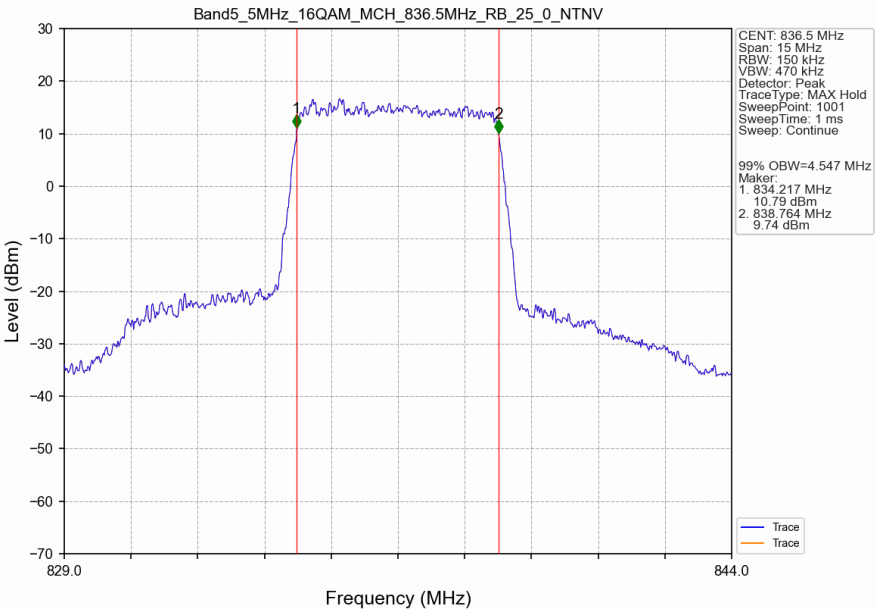
Band5 3MHz 16QAM MCH 836.5MHz RB 15 0 NTN



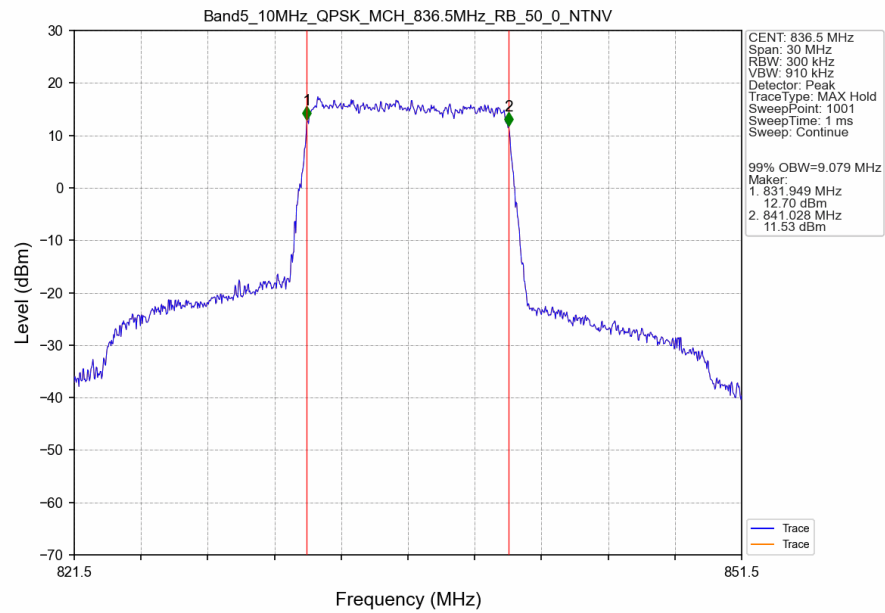
Band5 5MHz QPSK MCH 836.5MHz RB 25 0 NTNV



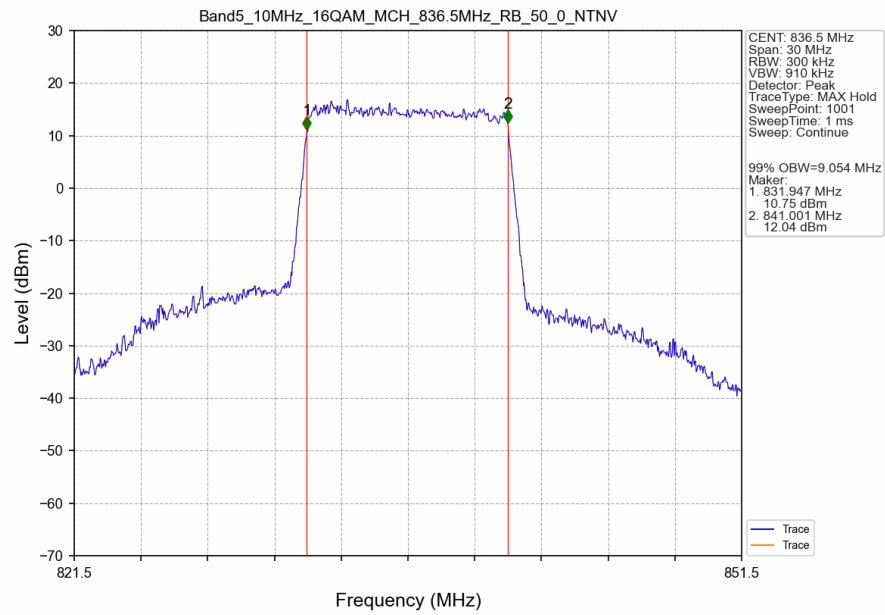
Band5 5MHz 16QAM MCH 836.5MHz RB 25 0 NTNV



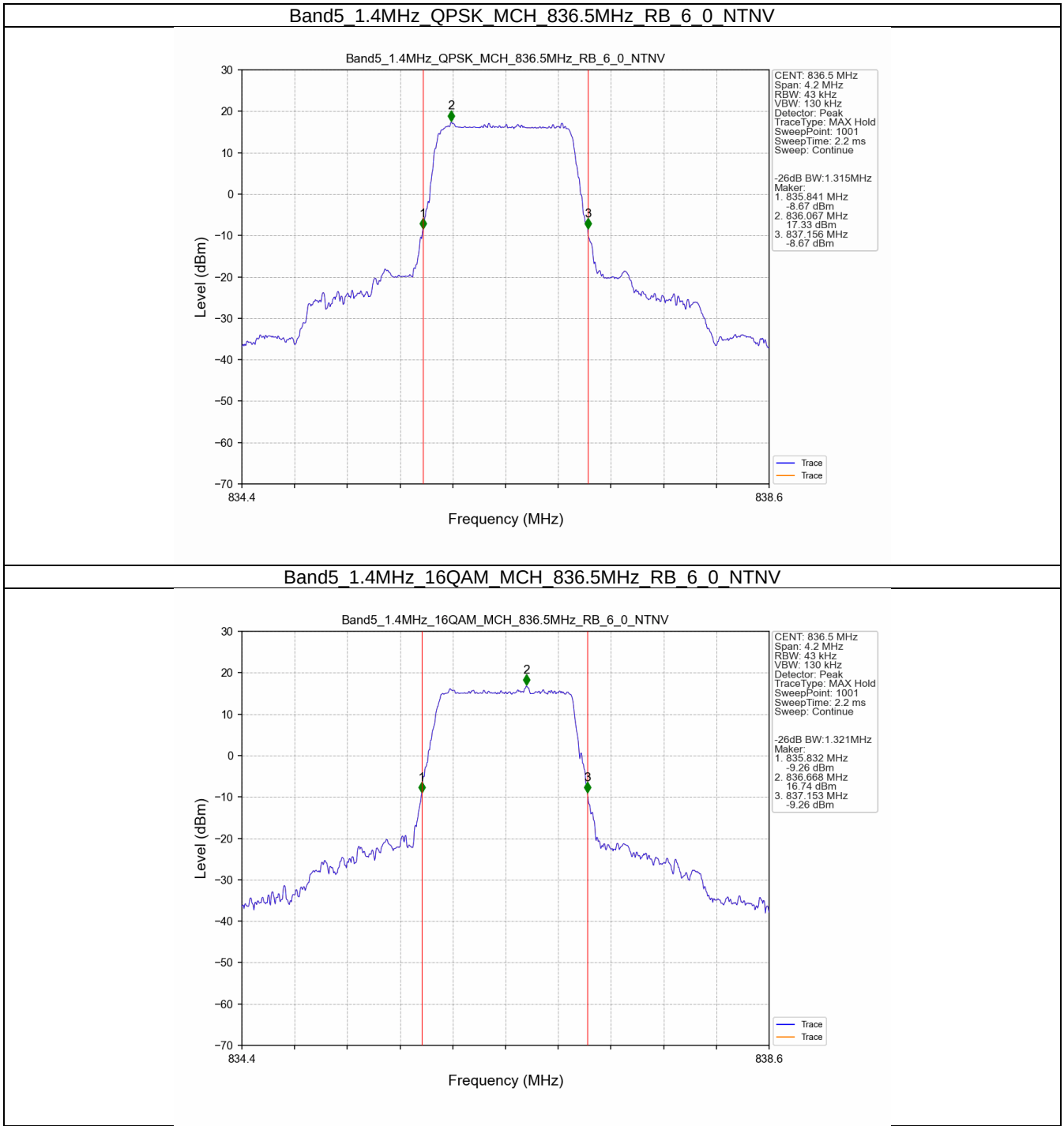
Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV



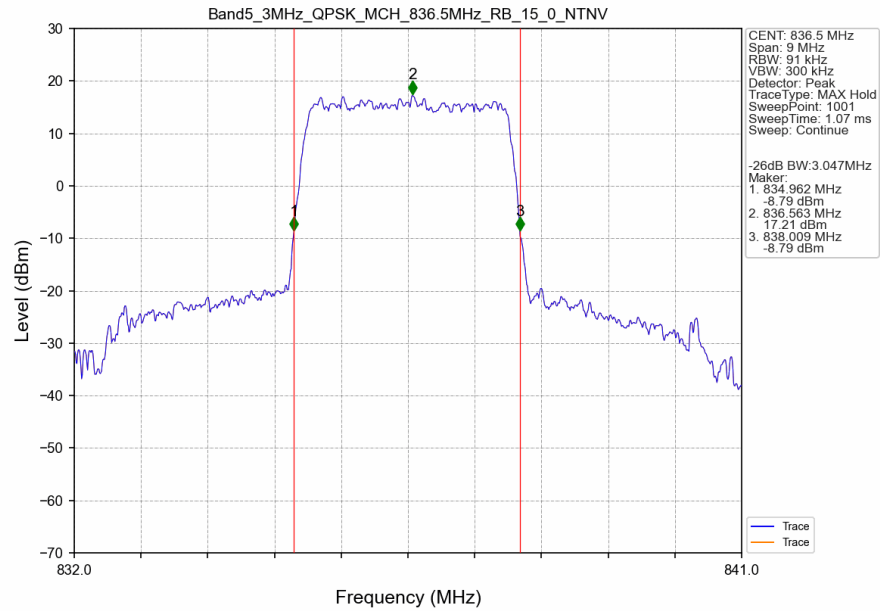
Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



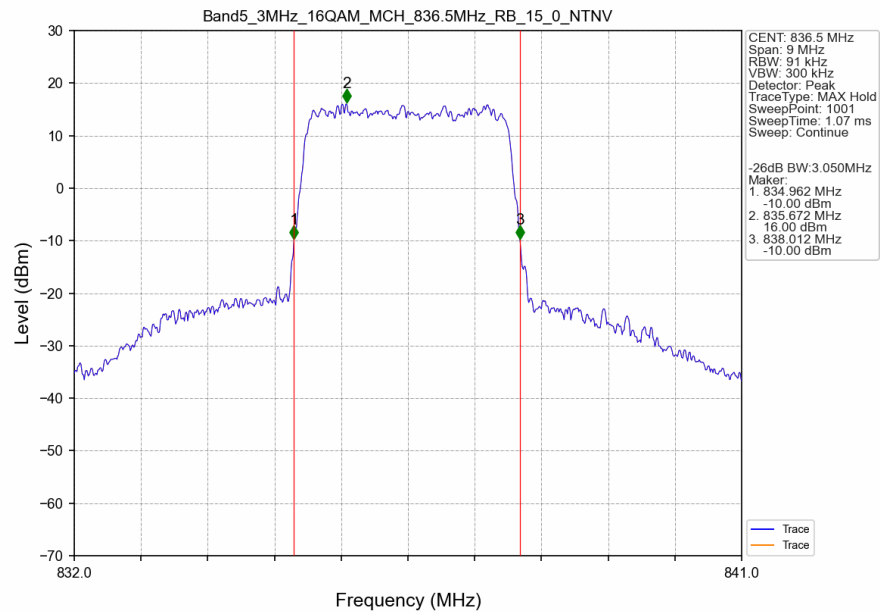
3.2.2 Band5_XDB



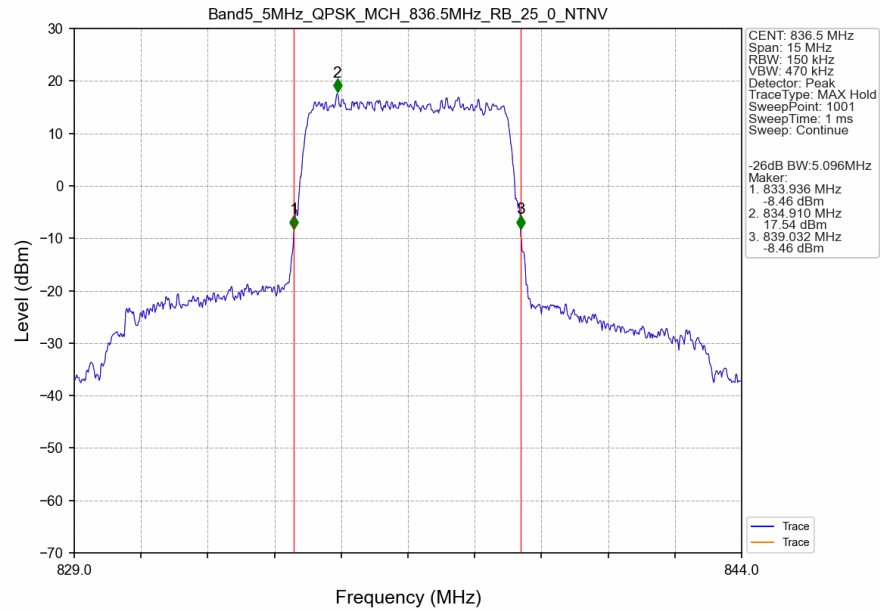
Band5 3MHz QPSK MCH 836.5MHz RB 15 0 NTNV



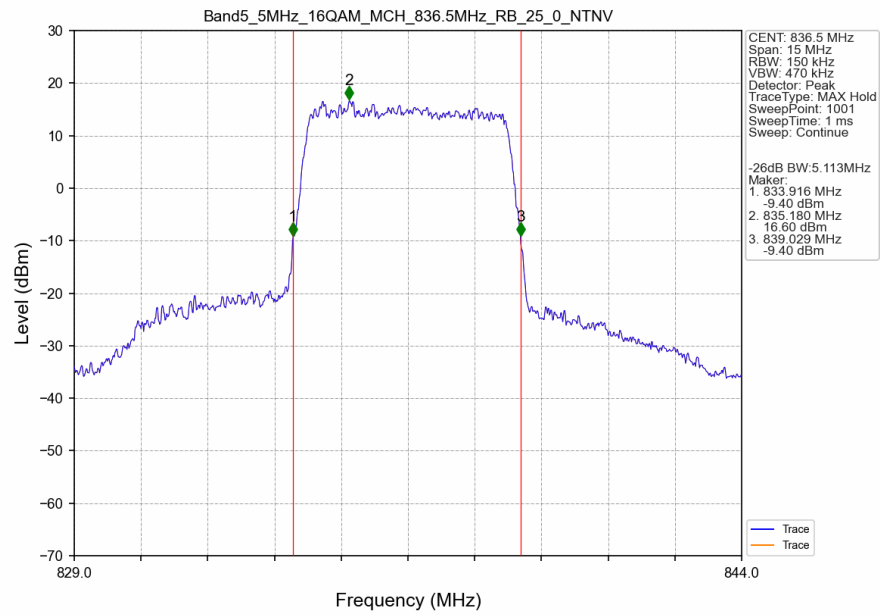
Band5 3MHz 16QAM MCH 836.5MHz RB 15 0 NTNV



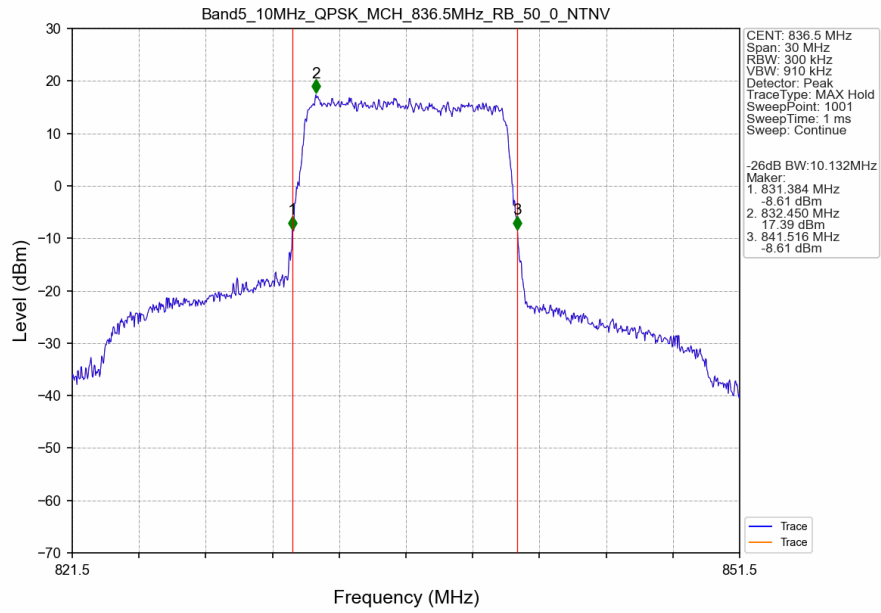
Band5 5MHz QPSK MCH 836.5MHz RB 25 0 NTNV



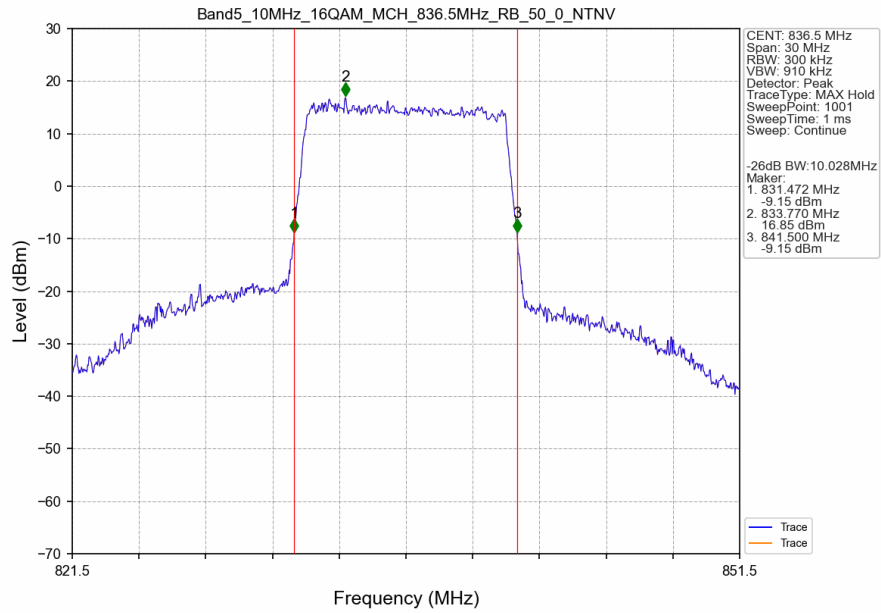
Band5 5MHz 16QAM MCH 836.5MHz RB 25 0 NTNV



Band5_10MHz_QPSK_MCH_836.5MHz_RB_50_0_NTNV



Band5_10MHz_16QAM_MCH_836.5MHz_RB_50_0_NTNV



4. Peak-Average Ratio

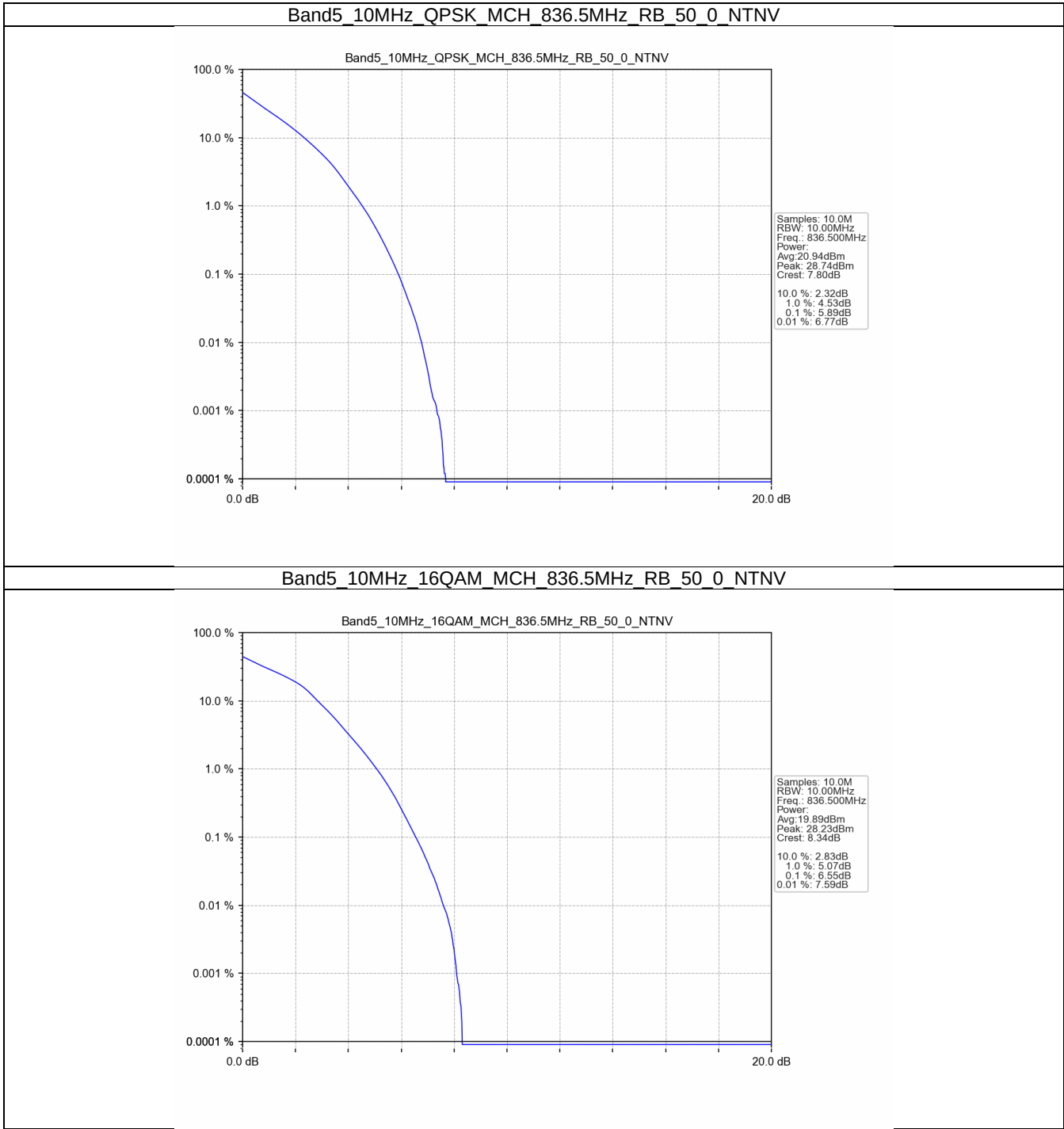
4.1 Test Result

4.1.1 B5_10MHz

Band: 5 / Bandwidth: 10MHz / NTV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	836.5	50	0	5.89	<=13	Pass
16QAM	836.5	50	0	6.55	<=13	Pass

4.2 Test Graph

4.2.1 B5_10MHz



5. Spurious Emission

5.1 Test Result

5.1.1 B5_1.4MHz

Band: 5 / Bandwidth: 1.4MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	824.7	1	0	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	848.3	1	0	Refer To Test Graph		Pass
			5	Refer To Test Graph		Pass
		6	0	Refer To Test Graph		Pass

5.1.2 B5_3MHz

Band: 5 / Bandwidth: 3MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	825.5	1	0	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	847.5	1	0	Refer To Test Graph		Pass
			14	Refer To Test Graph		Pass
		15	0	Refer To Test Graph		Pass

5.1.3 B5_5MHz

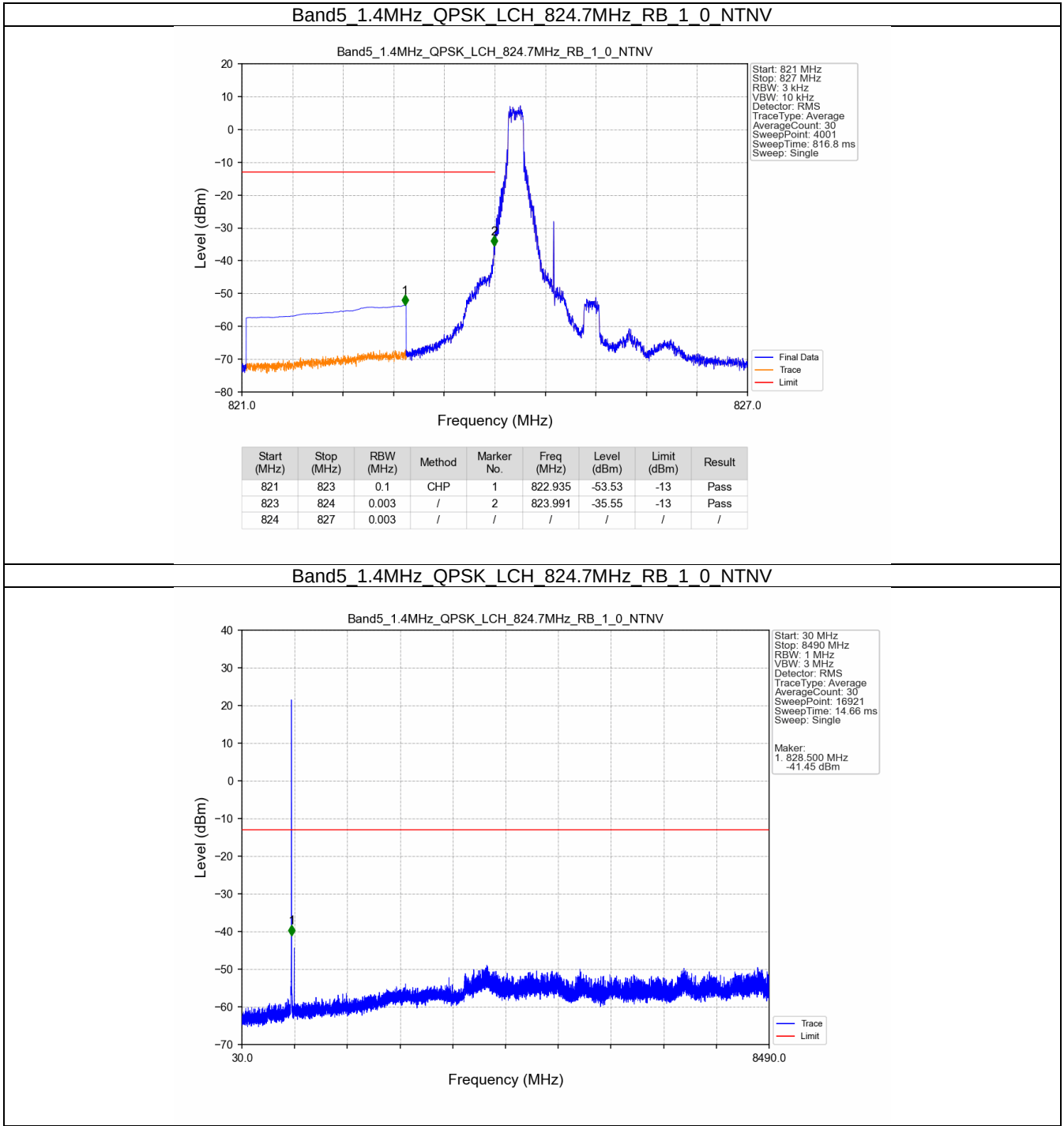
Band: 5 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	826.5	1	0	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	846.5	1	0	Refer To Test Graph		Pass
			24	Refer To Test Graph		Pass
		25	0	Refer To Test Graph		Pass

5.1.4 B5_10MHz

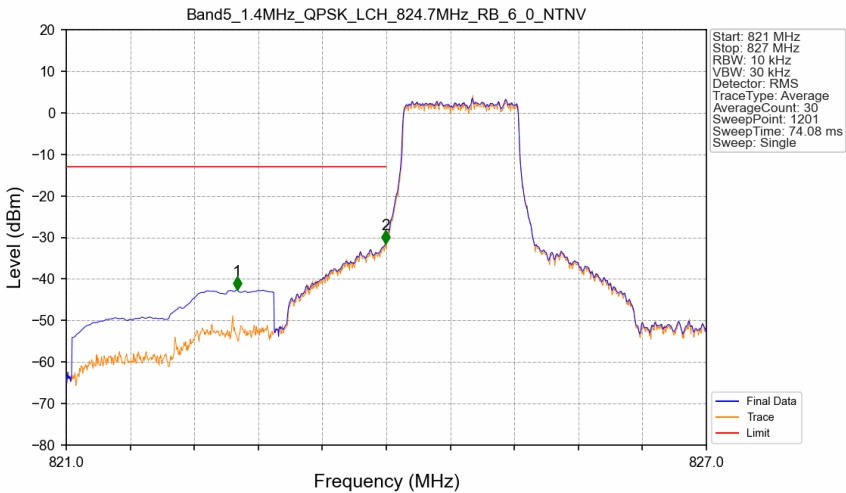
Band: 5 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Spurious Emission		Verdict
		Size	Offset	Result	Limit	
QPSK	829	1	0	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass
	836.5	1	0	Refer To Test Graph		Pass
	844	1	0	Refer To Test Graph		Pass
			49	Refer To Test Graph		Pass
		50	0	Refer To Test Graph		Pass

5.2 Test Graph

5.2.1 B5_1.4MHz

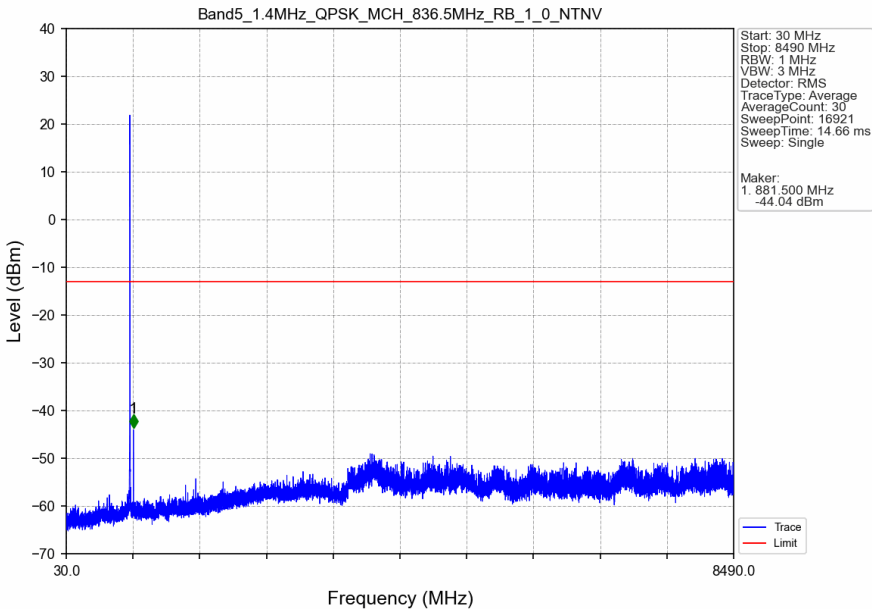


Band5 1.4MHz QPSK LCH 824.7MHz RB 6 0 NTNV

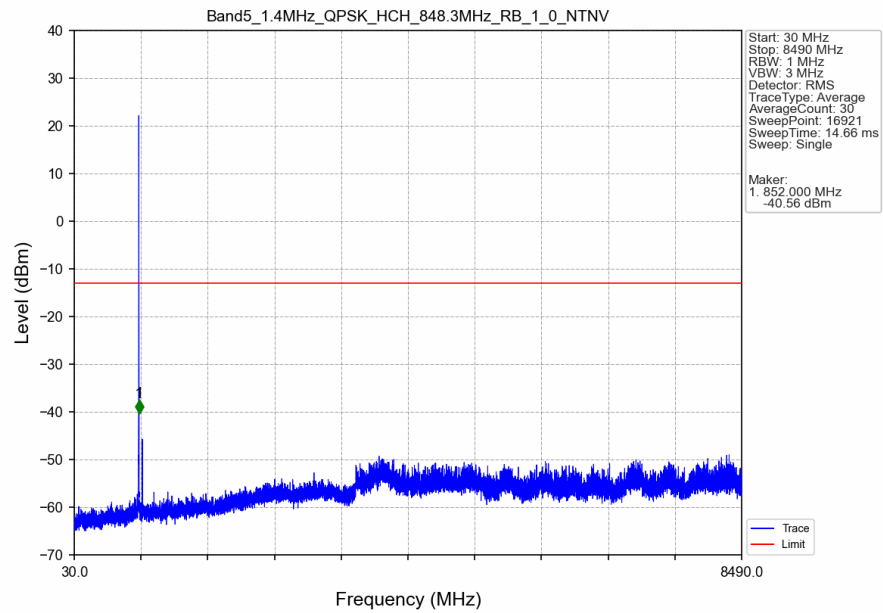


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
821	823	0.1	CHP	1	822.600	-42.60	-13	Pass
823	824	0.013	CHP	2	823.995	-31.45	-13	Pass
824	827	0.013	CHP	/	/	/	/	/

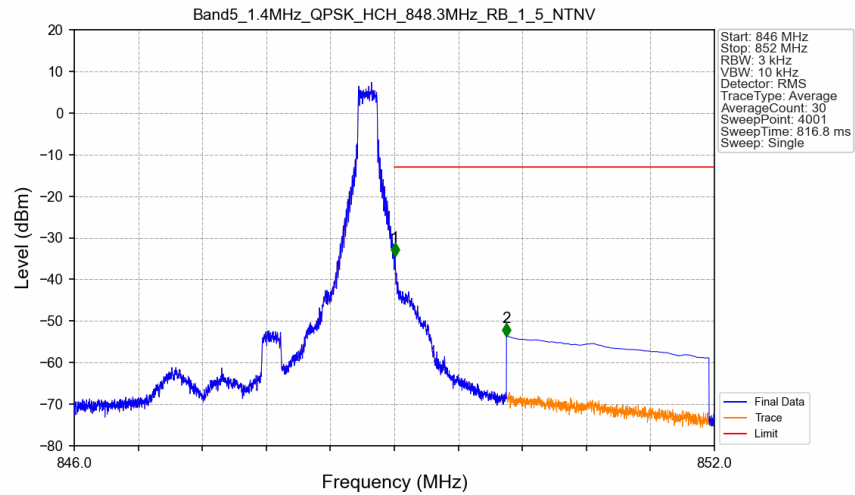
Band5 1.4MHz QPSK MCH 836.5MHz RB 1 0 NTNV



Band5 1.4MHz QPSK HCH 848.3MHz RB 1 0 NTN

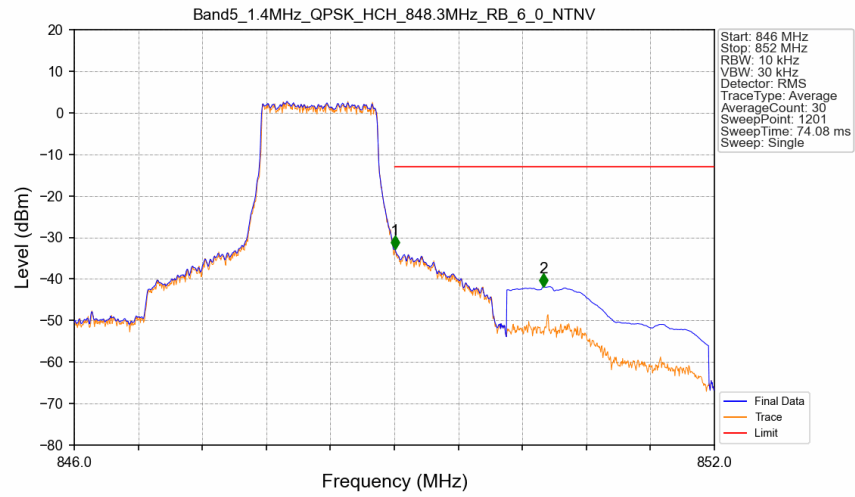


Band5 1.4MHz QPSK HCH 848.3MHz RB 1 5 NTN



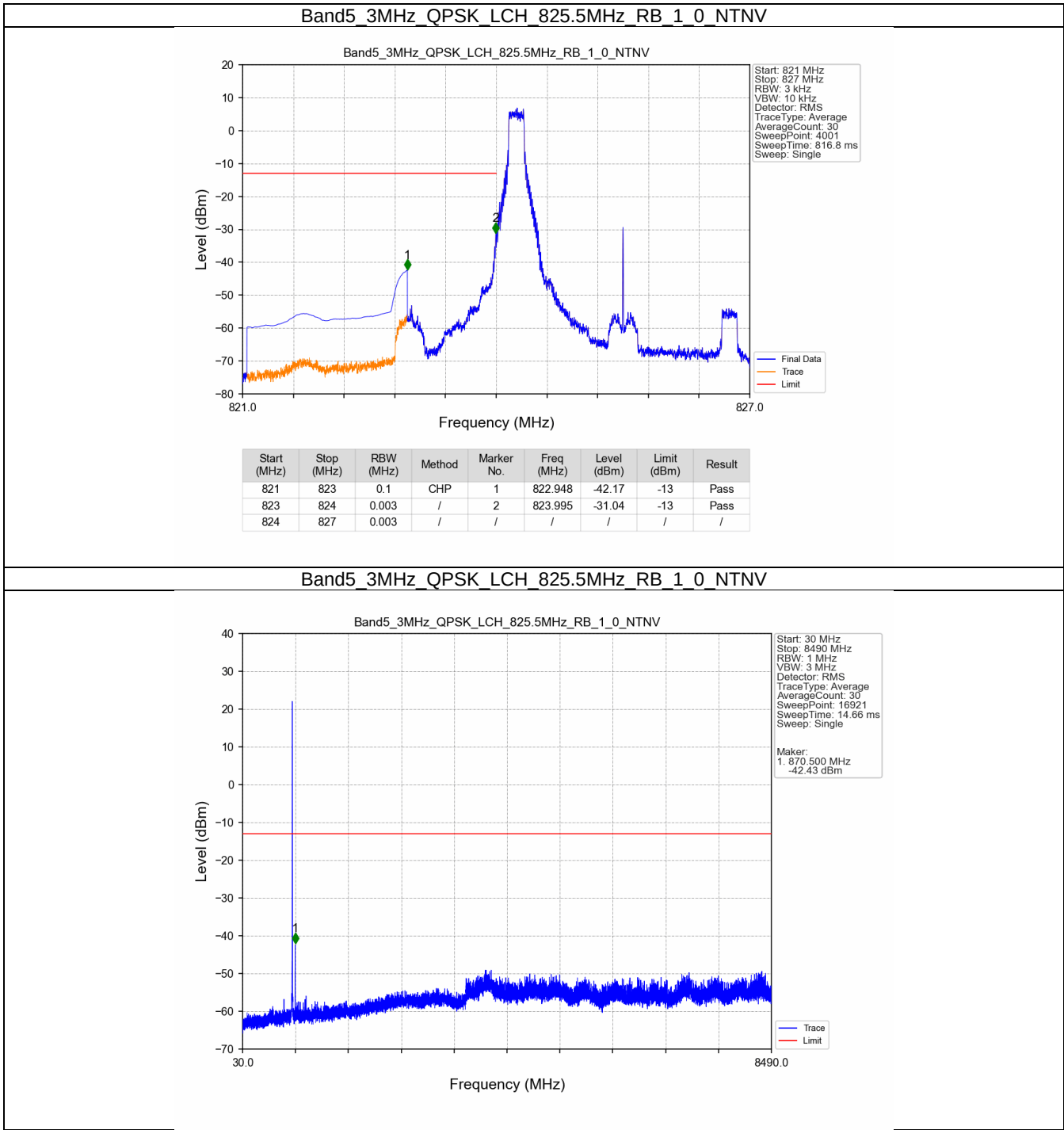
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
846	849	0.003	/	/	/	/	/	/
849	850	0.003	/	1	849.006	-34.39	-13	Pass
850	852	0.1	CHP	2	850.052	-53.66	-13	Pass

Band5 1.4MHz QPSK HCH 848.3MHz RB 6 0 NTN

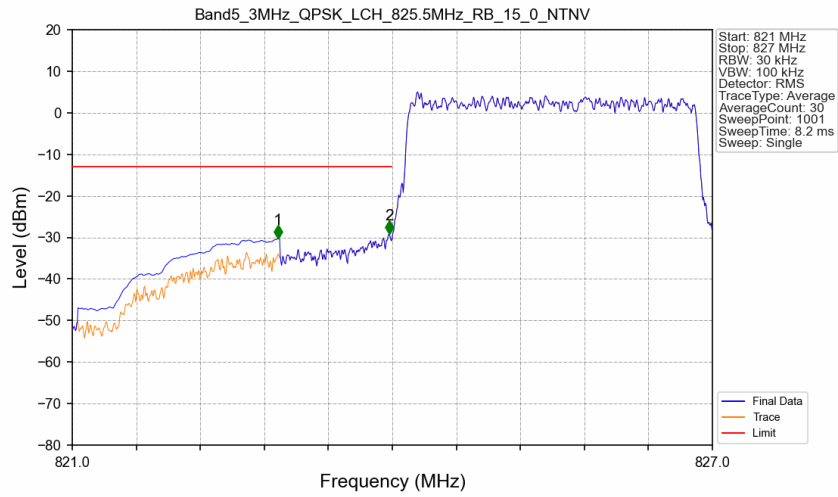


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
846	849	0.013	CHP	/	/	/	/	/
849	850	0.013	CHP	1	849.005	-32.82	-13	Pass
850	852	0.1	CHP	2	850.395	-41.84	-13	Pass

5.2.2 B5_3MHz

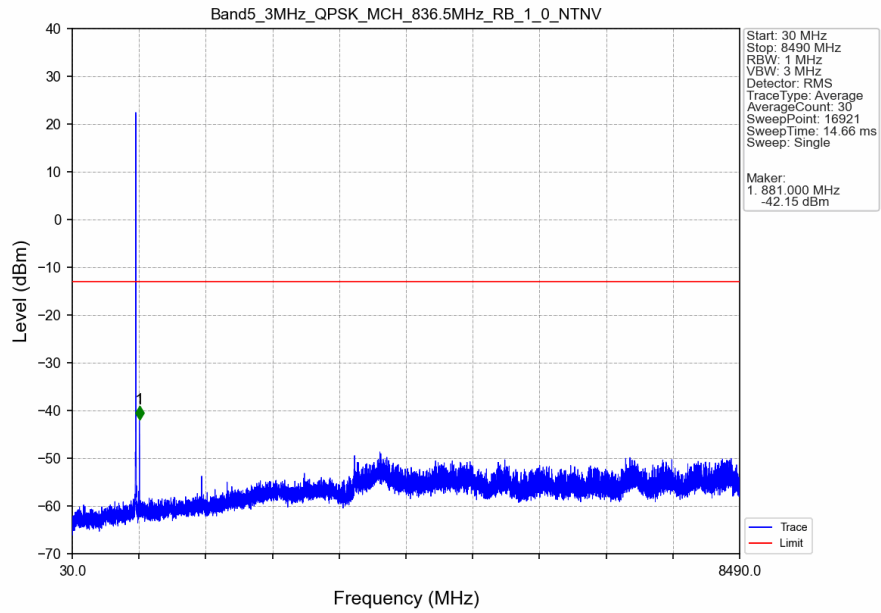


Band5_3MHz_QPSK_LCH_825.5MHz_RB_15_0_NTNV

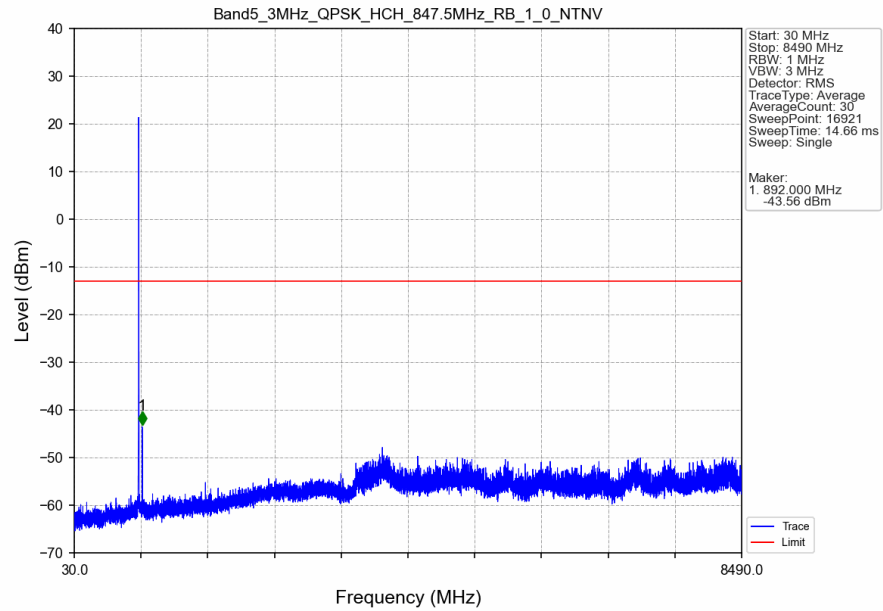


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
821	823	0.1	CHP	1	822.926	-30.30	-13	Pass
823	824	0.03	/	2	823.970	-29.16	-13	Pass
824	827	0.03	/	/	/	/	/	/

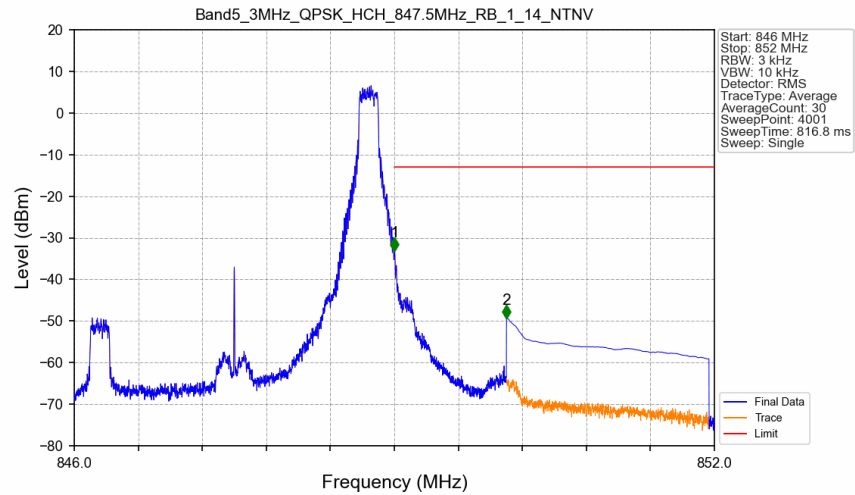
Band5_3MHz_QPSK_MCH_836.5MHz_RB_1_0_NTNV



Band5 3MHz QPSK HCH 847.5MHz RB 1 0 NTN

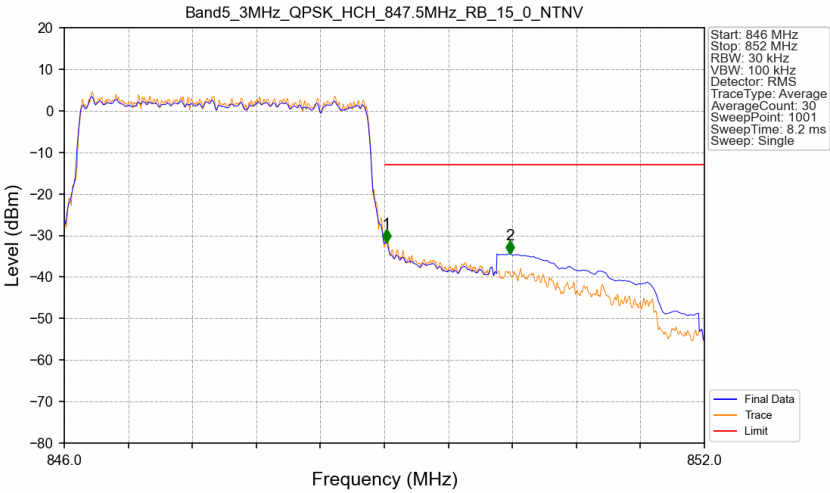


Band5 3MHz QPSK HCH 847.5MHz RB 1 14 NTN



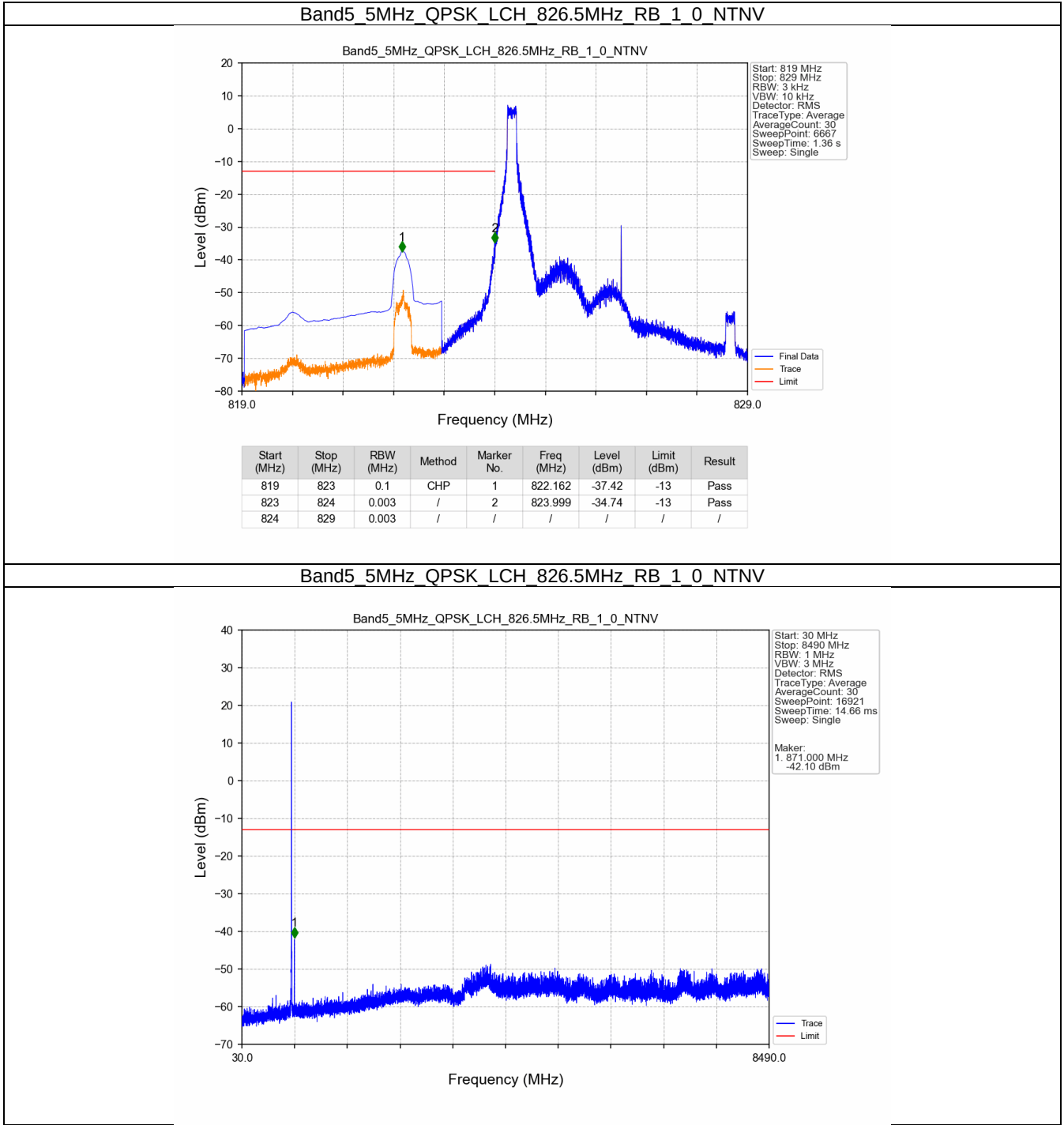
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
846	849	0.003	/	/	/	/	/	/
849	850	0.003	/	1	849.003	-33.13	-13	Pass
850	852	0.1	CHP	2	850.052	-49.43	-13	Pass

Band5 3MHz QPSK HCH 847.5MHz RB 15 0 NTN

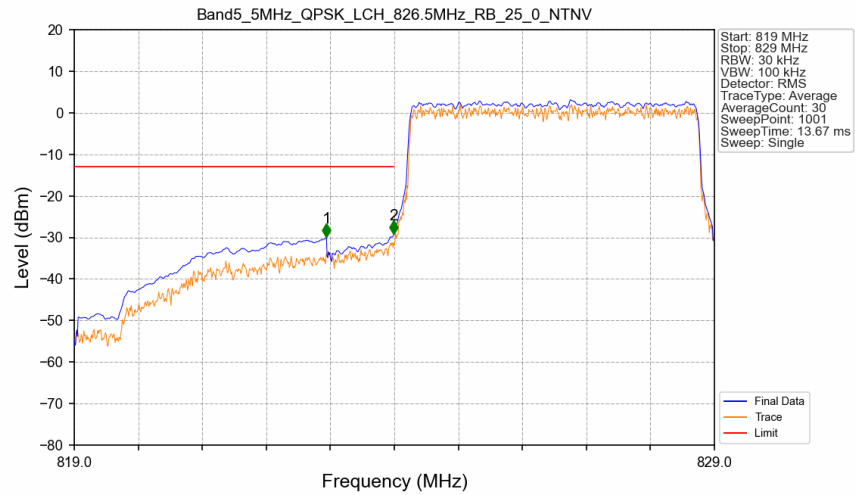


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
846	849	0.031	CHP	/	/	/	/	/
849	850	0.031	CHP	1	849.018	-31.62	-13	Pass
850	852	0.1	CHP	2	850.176	-34.41	-13	Pass

5.2.3 B5_5MHz

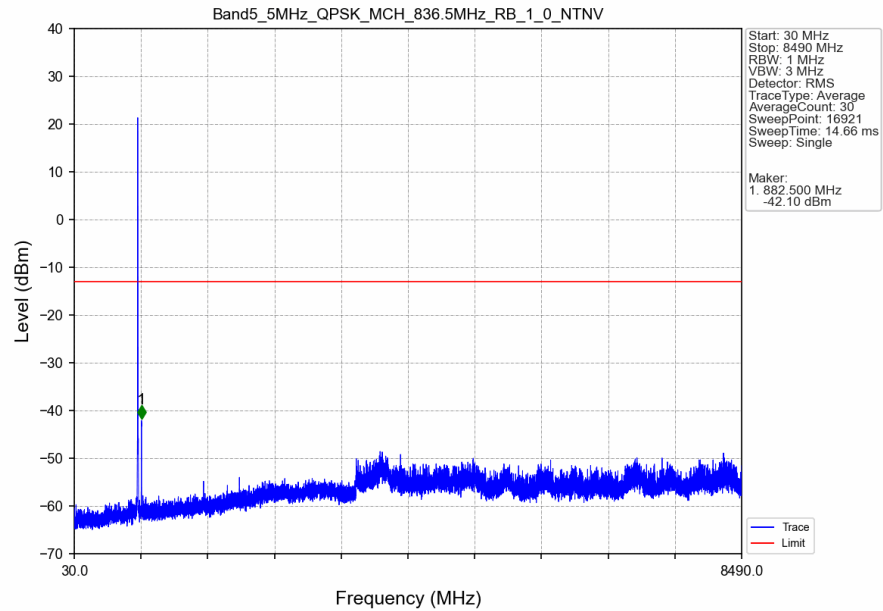


Band5 5MHz QPSK LCH 826.5MHz RB 25 0 NTN

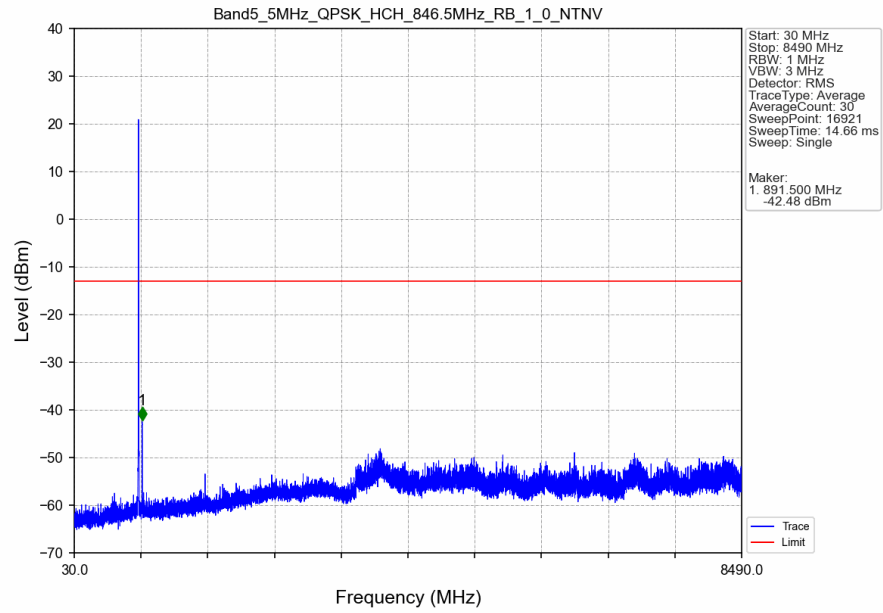


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
819	823	0.1	CHP	1	822.940	-29.93	-13	Pass
823	824	0.051	CHP	2	823.990	-29.18	-13	Pass
824	829	0.051	CHP	/	/	/	/	/

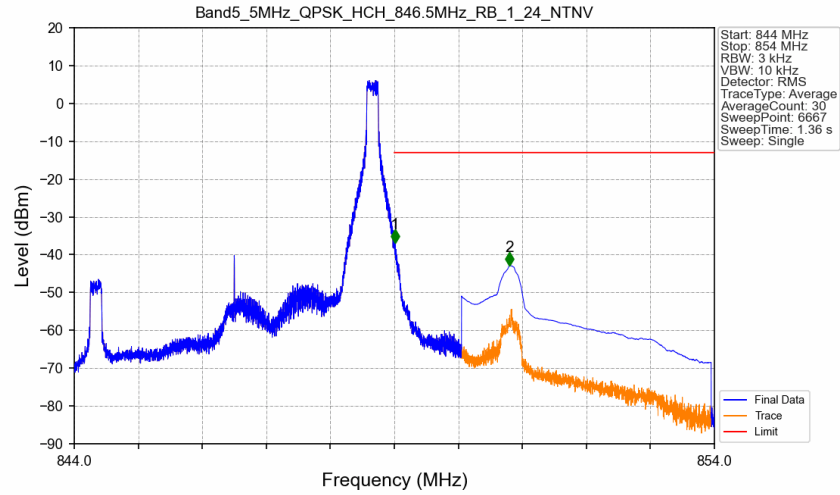
Band5 5MHz QPSK MCH 836.5MHz RB 1 0 NTN



Band5 5MHz QPSK HCH 846.5MHz RB 1 0 NTN

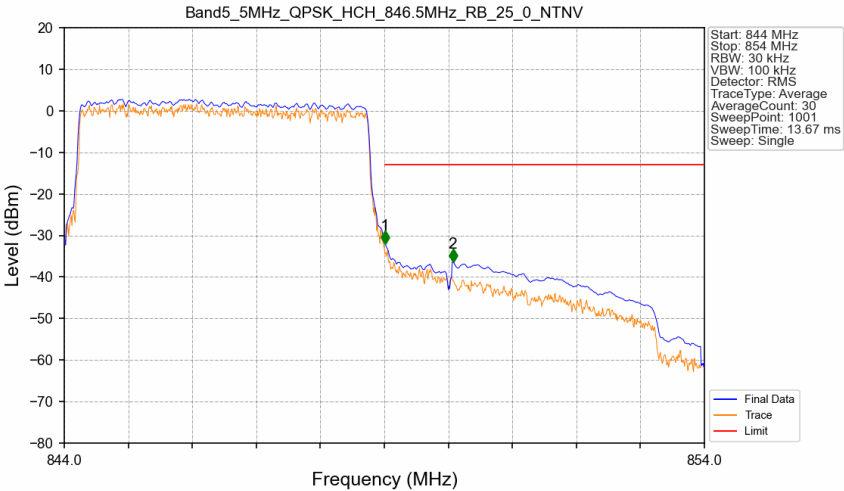


Band5_5MHz QPSK HCH 846.5MHz RB 1 24 NTN



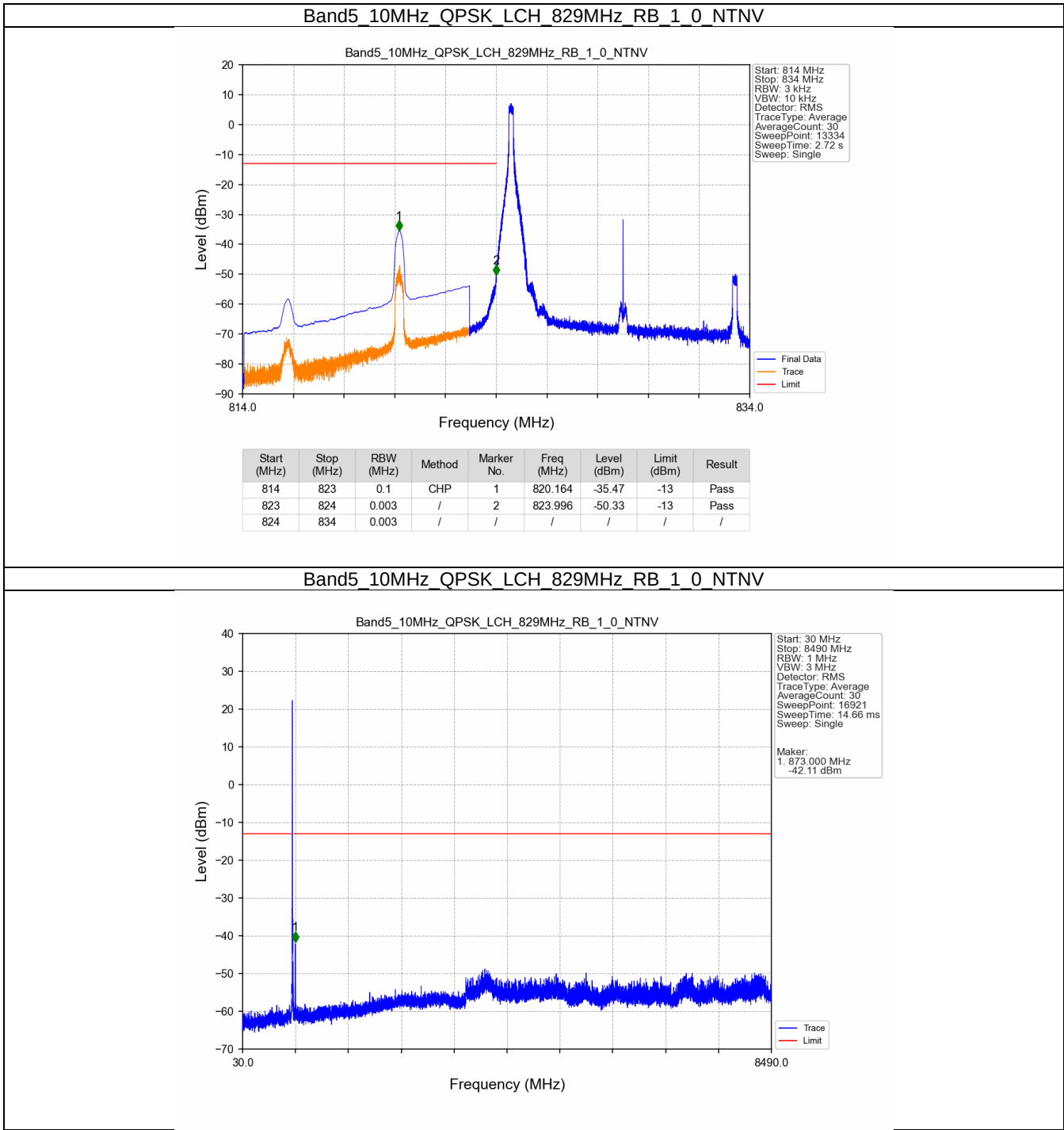
Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
844	849	0.003	/	/	/	/	/	/
849	850	0.003	/	1	849.012	-36.82	-13	Pass
850	854	0.1	CHP	2	850.800	-42.84	-13	Pass

Band5 5MHz QPSK HCH 846.5MHz RB 25 0 NTN

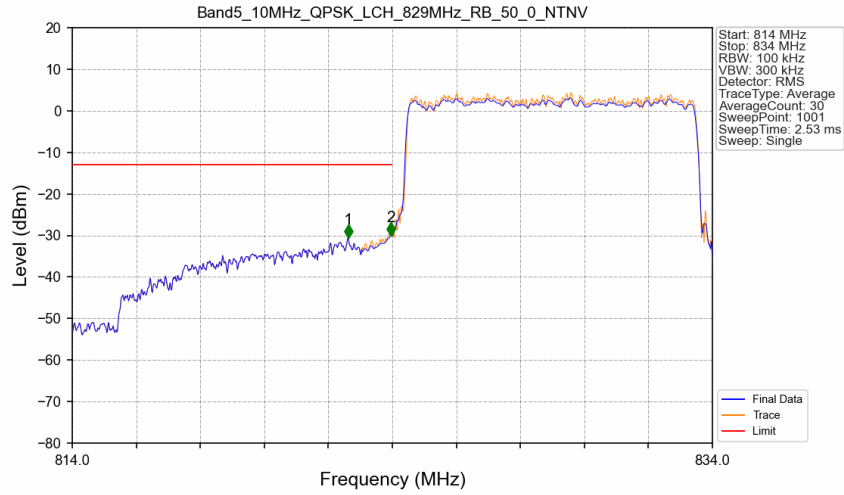


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
844	849	0.051	CHP	/	/	/	/	/
849	850	0.051	CHP	1	849.010	-32.12	-13	Pass
850	854	0.1	CHP	2	850.070	-36.42	-13	Pass

5.2.4 B5_10MHz

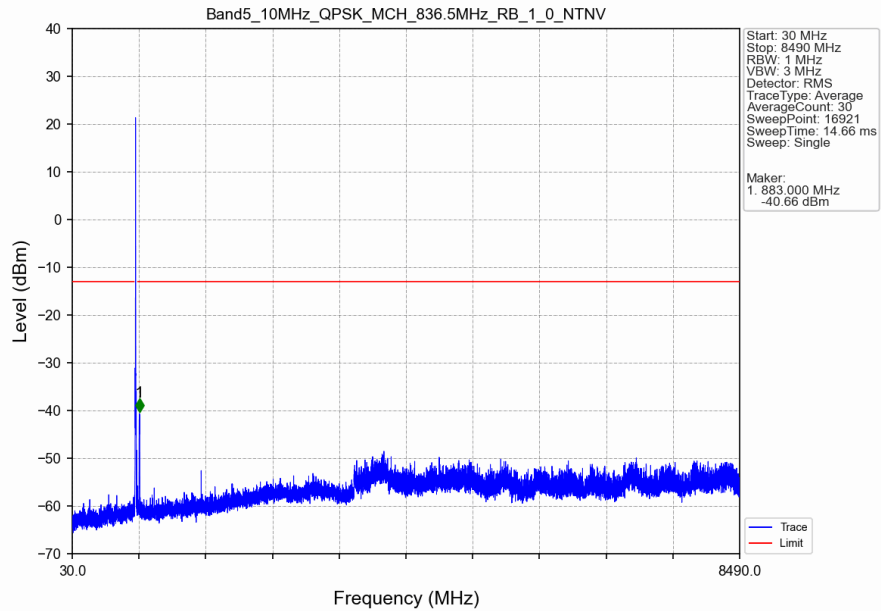


Band5 10MHz QPSK LCH 829MHz RB 50 0 NTN

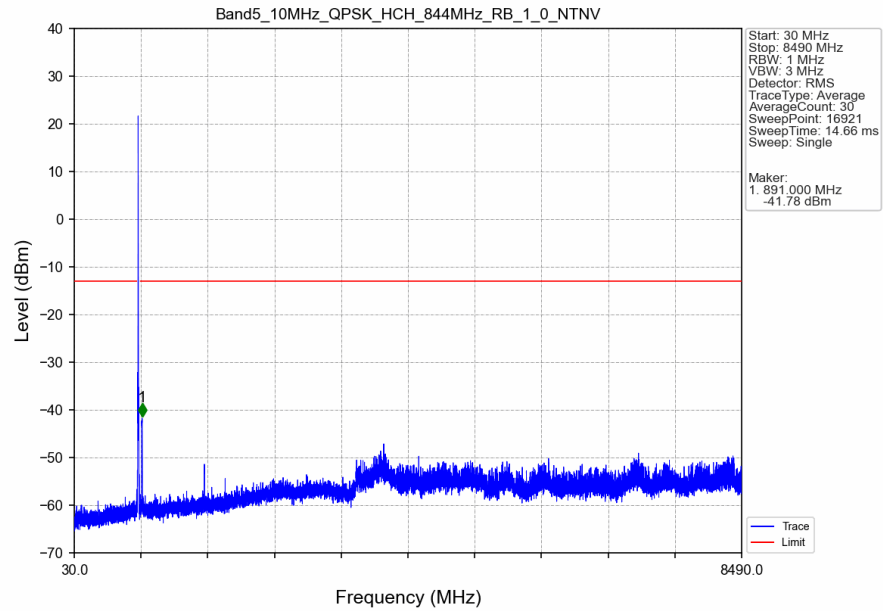


Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
814	823	0.1	/	1	822.620	-30.59	-13	Pass
823	824	0.101	CHP	2	823.960	-30.02	-13	Pass
824	834	0.101	CHP	/	/	/	/	/

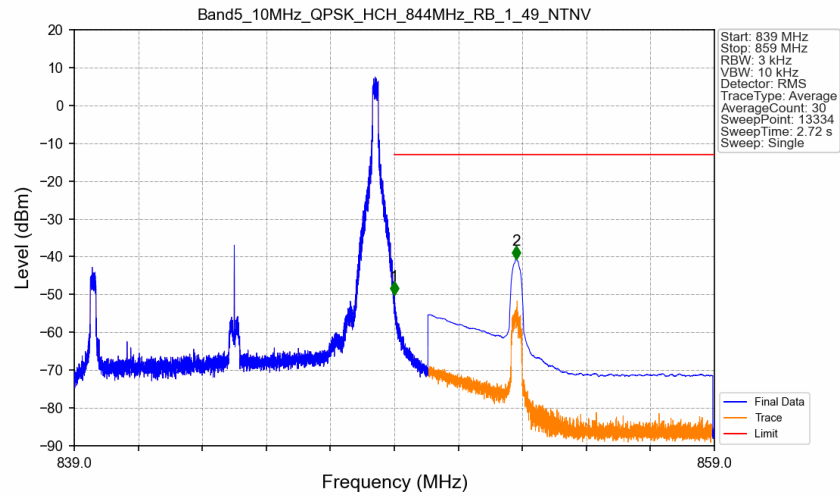
Band5 10MHz QPSK MCH 836.5MHz RB 1 0 NTN



Band5 10MHz QPSK HCH 844MHz RB 1 0 NTNV

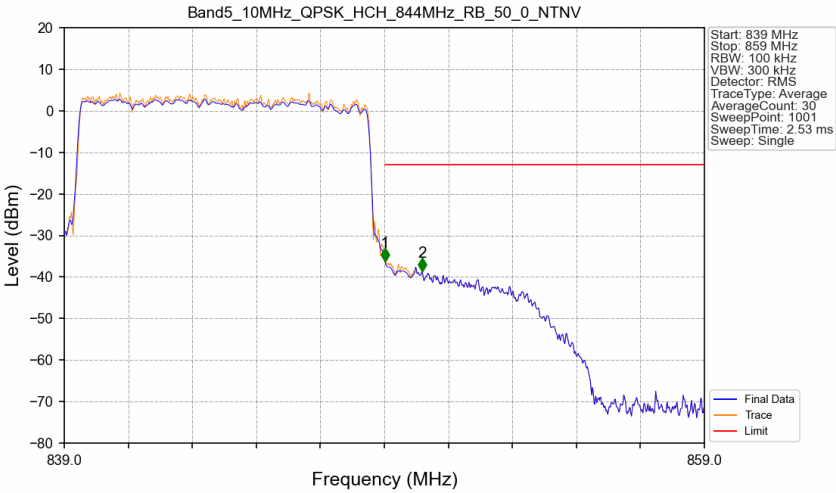


Band5 10MHz QPSK HCH 844MHz RB 1 49 NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
839	849	0.003	/	/	/	/	/	/
849	850	0.003	/	1	849.001	-50.11	-13	Pass
850	859	0.1	CHP	2	852.799	-40.62	-13	Pass

Band5_10MHz_QPSK_HCH_844MHz_RB_50_0_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	Method	Marker No.	Freq (MHz)	Level (dBm)	Limit (dBm)	Result
839	849	0.101	CHP	/	/	/	/	/
849	850	0.101	CHP	1	849.020	-36.27	-13	Pass
850	859	0.1	/	2	850.180	-38.68	-13	Pass

6. Field Strength of Spurious Radiation

LTE Band 5-Low channel, Modulation: QPSK, Bandwidth:10MHz, 1RB#0				
Frequency	Spurious Emission Level		Limit	Margin
(MHz)	Polaxis	(dBm)	(dBm)	(dB)
1649	H	-54.21	-13	41.21
2473.5	H	-58.4	-13	45.4
3298	H	-54.18	-13	41.18
1649	V	-48.94	-13	35.94
2473.5	V	-58.8	-13	45.8
3298	V	-54.96	-13	41.96

LTE Band 5-Middle channel, Modulation: QPSK, Bandwidth:10MHz, 1RB#0				
Frequency	Spurious Emission Level		Limit	Margin
(MHz)	Polaxis	(dBm)	(dBm)	(dB)
1664	H	-48.29	-13	35.29
2496	H	-57	-13	44.0
3328	H	-54.77	-13	41.77
1664	V	-45.81	-13	32.81
2496	V	-58.59	-13	45.59
3328	V	-55.17	-13	42.17

LTE Band 5-High channel, Modulation: QPSK, Bandwidth:10MHz, 1RB#0				
Frequency	Spurious Emission Level		Limit	Margin
(MHz)	Polaxis	(dBm)	(dBm)	(dB)
1679	H	-58.61	-13	45.61
2518.5	H	-57.31	-13	44.31
3358	H	-54.33	-13	41.33
1679	V	-51.93	-13	38.93
2518.5	V	-57.81	-13	44.81
3358	V	-55.45	-13	42.45